Neural network and classification approach in identifying customer behavior in the banking sector: A case study of an international bank

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Abstract

The customer relationship focus for banks is in development of main competencies and strategies of building strong profitable customer relationships through considering and managing the customer impression, influence on the culture of the bank, satisfactory treatment, and assessment of valued relationship building. Artificial neural networks (ANNs) are used after data segmentation and classification, where the designed model register records into two class sets, that is, the training and testing sets. ANN predicts new customer behavior from previously observed customer behavior after executing the process of learning from existing data. This article proposes an ANN model, which is developed using a six-step procedure. The back-propagation algorithm is used to train the ANN by adjusting its weights to minimize the difference between the current ANN output and the desired output. An evaluation process is conducted to determine whether the ANN has learned how to perform. The training process is halted periodically, and its performance is tested until an acceptable result is obtained. The principles underlying detection software are grounded in classical statistical decision theory.